



Landis among scientists chosen for Mars mission

Glenn's Dr. Geoffrey Landis, Photovoltaics and Space Environment Effects Branch, is one of 28 scientists selected to participate in the 2003 Mars Exploration

Rover (MER) mission. The mission consists of two separate, though identical, rovers scheduled for launch in mid-2003 and arrival at separate destinations on Mars in early 2004.

NASA's William Folkner, Matthew Golombek, Timothy Parker, and Albert Yen from the Jet Propulsion Laboratory; Douglas Ming, Johnson Space Center; and Michael Smith, Goddard Space Flight Center also are among the 28 representing scientific institutions, universities, and corporations across 13 states in the United States and Germany.

The 28 were selected based on their proposals, which were determined to offer the best science among a total of 84 proposals submitted in response to a December 2001 NASA Mars Exploration Rover Announcement of Opportunity. Each of the new investigators will work with the MER Program Office at NASA's Jet Propulsion Laboratory, Pasadena, CA, and will become full MER science team

members, joining previously selected scientists as part of the Athena science team.

"The breadth, scope, and creativity of the scientists selected is very encouraging," said Dr. Ed Weiler, NASA associate administrator for Space Science, Headquarters. "By directly participating in NASA's next mission to the surface of Mars, they will help bring us closer to the long-term objective of our Mars Exploration Program—understanding Mars as a planet and determining whether life ever existed there."

Landis has worked as a principal investigator and project scientist for three previous Mars experiments. They include the Materials Adherence Experiment, a solar cell experiment mounted on the solar-powered robotic rover, Sojourner, that arrived on the surface of Mars July 4, 1997, aboard Mars Pathfinder, as well as his experience in designing equipment

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Glenn establishes biomedical consortium

Glenn news release

NASA's goal of protecting astronauts' health during long-term space missions has led to the planned infusion of \$7.5 million into the Cleveland biomedical community over the next 3 years.

Glenn, the Cleveland Clinic Foundation, University Hospitals of Cleveland, and Case Western Reserve University signed an agreement on June 7 to establish the John Glenn Biomedical Engineering Consortium. The consortium also includes the National Center for Microgravity Research on Fluids and Combustion, a partnership between Case Western Reserve University and the Universities Space Research Association. Using an integrated, interdisciplinary approach, the consortium will combine member

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Hubble's infrared camera back in business

After more than 3 years of inactivity, and thanks to a new cryogenic refrigerator, the Hubble Space Telescope's Near Infrared Camera and Multi-Object Spectrometer (NICMOS) now provides various breathtaking views of galaxies in several stages of development. The first NICMOS test images demonstrate its powerful new capability for making remarkable discoveries unique to space-based near-infrared astronomy. The NICMOS' penetrating vision sliced through the edge-on dusty disk of a galaxy, NGC 4013, to peer all the way into the galaxy's core. Astronomers were surprised to see what appears to be an edge-on ring of stars, 720 lightyears across, encircling the nucleus.

Though such star rings are not uncommon in barred-spiral galaxies, only NICMOS has the resolution to see the ring buried deep inside an edge-on galaxy. Shifting its infrared vision to our stellar backyard, NICMOS peeled back the outer layers of the Cone nebula (also photographed by Hubble's Advanced Camera for Surveys in April) to see the underlying dusty "bedrock" in this stellar "pillar of creation." Images and additional information are available on the Web at <http://hubblesite.org/go/news>.

Unmanned Aerial Vehicles Applications Center

NASA officials have signed an agreement to explore development of a world-class center designed to investigate science and commercial applications of unmanned aerial vehicles (UAV's) equipped with high-resolution digital imaging systems. During a ceremony at Ames Research Center, officials from Ames, Dryden Flight Research Center, Clark University (Worcester, MA), and the Girvan Institute, a nonprofit organization, signed a Memorandum of Understanding to establish a UAV Applications Center in NASA Research Park at Ames. The charter of the new center is to conduct collaborative research and development, leading to enhanced scientific and commercial utilization of UAV's as high-resolution imaging platforms in national airspace. Images of the signing ceremony are available at <http://amesnews.arc.nasa.gov/releases/2002/02images/coffee/coffee.html>.

Space Station photo laboratory

The International Space Station will become a better place to take pictures of Earth for studying the environment and weather, with the addition of a new Earth observatory manufactured and tested at Marshall Space Flight Center. Recently shipped from Marshall to Kennedy Space Center, the Window Observational Research Facility (WORF) is scheduled for launch in January 2003. WORF will help space station crews take some of the best photographs ever snapped from an orbiting spacecraft by eliminating glare and allowing researchers to control their cameras and other equipment from the ground. Engineers at Marshall proposed a derivative of the EXPRESS experiment rack already used on the space station and were given the go-ahead. The WORF rack can hold a wide variety of experiments and provide them with power, communications, data, cooling, fluids, and other utilities. For more information, visit the web site at <http://www.msfc.nasa.gov/news/news/releases/newsreleases.html>.

Marshall engineer inspects WORF rack.



Mars scientists

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for the Dust Accumulation and Removal Technology and Mars Array Technology Experiment, two experiments that were scheduled to fly on the cancelled Mars 2001 Surveyor Lander mission.



Landis

Landis said that he is looking forward to the new opportunity. "I've looked over the list of the other participating scientists and it is going to be a great challenge to work with such a renowned group of people," he said. "I'm sure there will be a lot of work, but also a lot of fun."

Landis proposed use of the MER instrumentation to study the intensity and spatial and spectral distribution of solar energy on the surface of Mars, and to compare the measured values with various models of solar distribution. He will analyze this data to determine the solar energy incident on the surface of Mars, the performance of the solar arrays, and the rate of dust deposition on the solar panels. Phillip Jenkins (OAI), Photovoltaics and Space Environment Effects, will be collaborating on the data analysis.

The MER mission science will (1) study rocks and soils for clues to past water activity; (2) investigate landing sites that have a high probability of containing evidence of the action of liquid water; (3) determine the distribution and composition of minerals, rocks, and soils surrounding the landing sites; (4) determine the nature of local surface geologic processes; (5) calibrate and validate data from orbiting missions at each landing site; and (6) study the geologic processes for clues about the environmental conditions that existed when liquid water was present, and determine whether those environments were conducive for life. ♦

Editor's Note: Glenn's Space Power Facility at Plum Brook Station has played an important role in the MER mission air bag landing testing for risk reduction, see <http://mars.jpl.nasa.gov/spotlight/airbags01.html>.

NASA returns World Trade Center flag flown onboard Space Shuttle Endeavour

An American flag recovered from the debris in the days immediately following the terrorist attacks in New York was returned to the city during a special presentation on Flag Day, June 14. The American Museum of Natural History hosted the event at the Rose Center for Earth and Space.



The tattered flag, recovered by the city's police department, was flown in December onboard the Space Shuttle *Endeavour* during the STS-108 mission as part of the Agency's Flags for Heroes and Families campaign. The large American flag, along with other commemorative badges and patches, were flown with nearly 6,000 smaller American flags that were presented to the victims' families in New York, Washington, and Pennsylvania.

NASA Administrator Sean O'Keefe returned the items flown into orbit to New York Mayor Michael Bloomberg, Governor George Pataki, and representatives from the New York Police Department, the New York Fire Department, and the Port Authority of New York and New Jersey.

The presentation also featured a commemorative message from the American members of the *Expedition Four* crew—Daniel Bursch and Carl Walz—who were carried into space by *Endeavour*. Ellen Futter, president of the American Museum of Natural History, provided opening remarks.

Items flown in memory of the victims at the Pentagon and in Pennsylvania will be returned as appropriate events can be identified and scheduled. Distribution of the American flags for the survivors and families of the victims will be handled by the City of New York, the Department of Defense, American Airlines, and United Airlines. ♦

Holloway retires

Tommy Holloway, manager of the International Space Station Program Office at Johnson Space Center in Houston, retired on July 3. Holloway's deputy, William H. Gerstenmaier, assumes the responsibilities as program manager.



Holloway

"Tommy's been a fixture with NASA for nearly 4 decades and his contributions to the Agency's human space flight program and the Johnson Space Center are considerable," said Frederick D. Gregory, associate administrator for Space Flight at Headquarters in Washington. "His leadership helped set the standards of safety and success for our space shuttle and International Space Station programs. I will miss him both personally and professionally."

Gregory added that he has great confidence in Gerstenmaier's abilities to assume the lead role. "Bill and Tommy have worked side-by-side for years on a variety of projects, so I expect this to be a smooth and seamless transition," said Gregory. ♦

STS-107 to carry Glenn-developed experiments

Many hearts at Glenn will lift when STS-107/*Columbia* heads into orbit on July 19. Special relationships developed between Glenn and the STS-107 astronauts when the entire crew visited Glenn last year to train on the Combustion Module-2 (CM-2), one of the highest priority experiments on the mission.

CM-2 is one of several Glenn-developed experiments to fly on the STS-107 mission that will examine health and safety issues that are relevant on Earth and in space. The experiments are part of the NASA Enterprise on Biological and Physical Research, with the objective of using the space environment as a laboratory for testing fundamental principles of physics, chemistry, and biology. Three experiments that will be mounted sequentially on CM-2—Laminar Soot Processes,

Structures of Flame Balls at Low Lewis-number, and Water Mist Fire Suppression—will focus on pollution control, fuel efficiency, and fire suppression.

While at Glenn, crew training focused on how the astronauts could enhance the science return by making physical adjustments on-orbit to the flames and camera setting, if necessary, and by becoming familiar with actual hardware and software. The STS-107 crew includes Shuttle Commander Rick Husband; Pilot William McCool; Payload Commander Mike Anderson; Mission Specialists David Brown, Kalpana Chawla, and Laurel Clark; and Payload Specialist Ilan Ramon.

The STS-107 mission will include three additional Glenn-managed experiments: the Space Acceleration Measurement

System Free Flyer, which provides real-time data to manage microgravity experiment operations; the Critical Viscosity of Xenon-2, which is the first experiment to measure shear thinning in a simple fluid; and the Orbital Acceleration Research Experiment, which measures low-frequency, low-magnitude acceleration levels onboard the shuttle. ♦



Editor's note: Visit www.spaceflight.nasa.gov for the latest details

News and Events

Mayor meets Pre-Apprentice students

City of Cleveland Mayor Jane Campbell recently visited Glenn for a NASA/WIRE-Net Pre-Apprentice Machining Program Overview. The partnership conducts a full-time 32-week program that trains economically disadvantaged individuals for careers in metalworking. It also includes participation by local organizations that are supported by the Empowerment Zone and/or work with the targeted population. After Center Director Donald Campbell, Deputy Chief of the Manufacturing Engineering Division Peter Murray, and Wire-Net Executive Director John Colm briefed Mayor Campbell on the program, she interacted with students in the shop training area. Pictured, student Robert Major explains his work on the Bridgeport milling machine to Mayor Campbell.



Photo by Tom Jares

Emergency response drill

On May 21, Cuyahoga County tested an emergency response plan for hazardous materials at Glenn. This exercise involved emergency responders from the County's west side and was coordinated by the Cuyahoga County Local Emergency Planning Committee and the County's Division of Emergency Services. Glenn personnel, the Fairview Park and Brook Park Fire Departments, the West Shore Hazardous Materials Team, the Southwest Emergency Response Team, and Police Enforcement Bureaus for the Southwest and West Shore areas were principal participants. Pictured (left to right) is Fairview Park Councilman Fred Gauthier and Mayor Eileen Ann Patton and Glenn's Luke Wilkins of the Safety Office, and Lori Rachul, Community and Media Relations Office.

IFMP EXPO

More than 550 people attended the IFMP (Integrated Financial Management Program) EXPO, which was held on May 1. Demonstrations and briefings were provided for Resume Management, Core Financial, Travel Management, The Learning Center, and Position Description Management. As a result of Glenn's resounding success, other centers have modeled the EXPO format. On July 15, Position Description Management goes live. Pictured (seated) is Fran Pierce (0410), demonstrating to Lynn Wiersma and Monica Palivoda (6000) how to modify a position description.

Celebration of unity

Keynote speaker Dr. David Namkoong focused on "Appreciation of Similarity and Diversity" at the Asian/Pacific Islander American Heritage recognition program held at Glenn on May 29. Namkoong, who is president of the Asian/Pacific American Federation in Cleveland and a retired Glenn engineer, briefly noted the practicality of embracing the concept of diversity to attract a new, more diverse workforce to replace a shrinking white majority population. A cornucopia of information, entertainment, and food was presented from the cultures of China, East India, Japan, Korea, Vietnam, and Hawaii. Pictured is a unified choir that led the audience in the anthem "We Shall Overcome."



Photo by Tom Jares

Photo by Doreen Zudell



Move it off

Employees recently gathered to celebrate the annual Movin' and Winnin' Weight Management Program, sponsored by the Fitness Center. Winning team members, Micro-Butts' Bob Corban (6700), Jim Free (6510), Marsha Nall, Diane Malarik, and Terry O'Malley (6724), and The New MilLEANiums' Bruni Cotto (IDI/7100), Jim Fleet (7250), Art Gedeon (retired), and Pat Gedeon (ACS/7160), tied for first place by exercising five times a week for 12 weeks and attaining weight loss/maintenance goals. Team captains Fleet and Malarik are pictured by food collected to represent the 662 pounds lost in the contest. The food was donated to the needy of Brook Park. The majority of participants in the program exercised 4.5 days per week. On average, each participant lost 5.4 pounds.



Photo by Nancy Fullen



Director's Corner

With Donald Campbell

Welcome aboard, Dr. Creedon

The Associate Administrator for the Office of Aerospace Technology has a very demanding job. The Office is responsible for aeronautics and associated space programs, developing integrated long-term technology, establishing new commercial partnerships, and maintaining core competencies at the field centers. I can think of no one more capable or deserving of this position than Dr. Jeremiah Creedon.

Dr. Creedon, who began his NASA career as an engineer at the Langley Research Center in 1963, conducted and managed research related to aircraft control and information systems, avionics technology, and aircraft flight control systems. Before he took the helm as director of the research laboratory in 1996, Dr. Creedon worked in a number of managerial positions at the branch, division, and directorate levels. These

experiences have provided him with first-hand knowledge of the daily operations and challenges that field centers encounter, especially those focused on aeronautics and aeropropulsion.

I have known Dr. Creedon for several years and have full confidence that we will have an excellent relationship with him.

The author of more than 30 technical articles, Dr. Creedon is a fellow of the American Institute of Aeronautics and Astronautics and has twice received NASA's Outstanding Leadership Medal. His personal contributions and untiring commitment to NASA and to the Nation make him an outstanding choice to lead the Aerospace Enterprise. ♦

News Notes

DISABILITY AWARENESS MODULE:

An Agencywide Disability Awareness training module has been added to Site for Online Learning and Resources (SOLAR). The module covers three parts of the Rehabilitation Act of 1973: Section 501 (rights of Federal employees with disabilities), Section 504 (programs and services conducted or funded by the Federal Government), and Section 508 (electronic and information technology). The module is easy to follow and gives lots of examples. It should take approximately 1 hour to complete. This training is mandatory for all Glenn supervisors, and highly recommended for all Glenn employees. Supervisors are encouraged to take this training before the end of the fiscal year, as another module will be rolled out during FY03. Questions can be directed to Deb

Cotleur, Equal Opportunity Disability Program manager, at 3-3904.

AUTHOR SPEAKS ON SPACE: Lawrence M. Krauss, author of *The Physics of Star Trek*, *Beyond Star Trek*, and *Atom*, will give a lecture at Glenn on August 7 in the DEB Aud. from 9 to 11 a.m. The lecture, entitled "Space Exploration, The Next Generation," is open to all civil service and support service contractor employees; however, priority will be given to registered attendees. Interested employees should submit their names through supervisory channels to their Staff/Division Office training coordinator by July 8. The lecture is part of the Engineering Training Committee's Pathfinder Visionary Speakers Program. For information, contact Dr. Daniel Glover at 3-2847 or Nona Akos at 3-8520.

R&T REPORT ONLINE: The 2001 Research & Technology Report is available in hard copy and online at <http://www.grc.nasa.gov/WWW/RT/>.

LESA MEETING: LESA/IFPTE, Local 28, will hold its monthly membership meeting on Wednesday, July 10, at noon in

Shoe Fund

Glenn's Shoe Fund, a 33-year tradition that has helped make the school year brighter and warmer for needy children, will hold its annual fundraiser drive July 8 to 12. Donations will go to Shoes and Clothes For Kids, a local charity that provides hundreds of thousands of pairs of shoes and clothing items to children in the Cleveland area. Watch for flyers and envelopes on donating or call Marcia Bellamy at 3-7442.



**2002 NASA
Honor Awards Ceremony
August 2, 2002
1 to 3 p.m., DEB Auditorium
Keynote Speaker: General Lester L. Lyles, commander,
Wright-Patterson Air Force Base**

Security Update

Graphic by Kelly Shankland

OPSEC addresses hostile relations

Operations security (OPSEC) threat analysis recognizes that intelligence services from hostile nations and several friendly countries collect leading-edge technology and industrial secrets by classic spying and open-source information.

"OPSEC permits us to better protect ourselves against terrorist attacks and our information and technology from adversaries or competitors," explained Donald Ornick, chief of Glenn's Security Management Office (SMO). "This Agencywide program allows us to perform our mission while minimizing the release of sensitive or potentially harmful information to unintended recipients, including adversaries or foreign industrial competitors."

Here are a few examples of how foreign intelligence services try to gain the edge:

- Some adversaries' objectives have changed from "win the war" to "win the contract," through the use of industrial espionage.
- Pricing and contract negotiation strategy, design data, and other "proprietary information" are passed to the foreign competitor for real-time business use.
- Nations developing the ability to deliver weapons of mass destruction could advance their programs with "obsolete" U.S. missile technology.
- Your home computer may be targeted by state-sponsored collectors and compromised. Does your home computer contain unauthorized work-related information? Do you receive suspicious e-mail?

OPSEC *does not* mean that Glenn cannot conduct research and share the appropriate information with intended recipients, maintains Ornick.

"OPSEC is sometimes called an umbrella program, which serves as an outer shield

for all other operational or security programs," Ornick said. "Unclassified programs and operations, plus information security, personnel security, physical security, foreign visits and assignments, computer security, counterintelligence and counterterrorism, and classified programs are all part of OPSEC."

SMO has initiated an OPSEC public awareness campaign involving the development and implementation of a formal five-step OPSEC program. This will require the full participation of employ-

ees, who will be asked to assess their operations and implement sound OPSEC practices:

1. Identify the threat: the spy, the industrial competitor, the "insider," the terrorist, and other criminals.
2. Identify what we need to protect: What information is sensitive and why?
3. Determine what is vulnerable and how it is vulnerable: Are there ways for unauthorized persons to get information or to harm personnel or programs?
4. Assess the risk: Can we take the risk of loss, based on the threat, and the financial and operational cost of protection?
5. Apply countermeasures: Take action to reduce risks that we are unwilling to accept.

"You will be hearing more about OPSEC in the future," Ornick said. "Meanwhile, contact the SMO's Paul Wells, 3-3152, if you have OPSEC questions." ♦

Employees support memorial fund

The annual interest paid out from the Shannon Edwards Memorial Fund will augment grants supporting enrichment programs at North Ridgeville City Schools beginning Fall 2002. This permanent endowment fund was jumpstarted last year by the generous contributions of Glenn employees. Daryl (Thermal and Fluid Systems Design and Analysis Branch) and Karen (Office of Acquisition) Edwards' daughter, Shannon, died at the age of 10 from pneumonia complicated by Nemaline Rod Myopathy, a rare neuromuscular disease.

"NASA was a big part of Shannon's life beginning from her infant years at Lewis Little Folks, Inc., to participation in various annual programs including Take Our Children to Work Day, holiday shows, and other family-oriented events," explained Linda McMillen, Computational Environments Branch, a close friend of the Edwards and former North Ridgeville School Board president. "The fund not only serves to keep Shannon's memory alive but also offers ongoing support to those programs that helped to enrich her too-short life."

The fund will help pay for an innovative Ohio Bicentennial Quilt project. The Edwards also donated additional funds at a recent North Ridgeville School Board meeting for several other programs based on their benefit to the curriculum, as well as what would have appealed to Shannon. ♦

Pictured (left to right, standing) are Karen Edwards, Deputy Director of Operations Dr. Julian Earls, Maryann Pawson, Office of Acquisition, and (seated) Shannon and Ryan Edwards at Glenn's 2000 Take Our Children to Work Day.



Centennial of Flight

Across time and space

BY S. JENISE VERIS

Keying in data from bits and pieces of information forwarded from retirees as well as from files resurrected from boxes stored across the Lab—this is the awesome but enlightening task of Glenn Archivist Bonnie Smith, (IDI) Logistics and Technical Information Division (LTID).

Smith has been charged with crafting Glenn's History Timeline Database as part of the Center's contribution to the celebration of the Wright Brothers' Centennial of Flight in 2003. The project was conceived by Executive Officer for Research and Technology Susan Hennie as a unique marketing and reference tool that highlights Glenn contributions to the history of powered flight.

"While the impetus for creating the

timeline was the Centennial of Flight, the real beauty is that it captures history that we have never comprehensively documented and affords us the opportunity to extract specific aspects of our technology to display on a common graphic design at each Centennial of Flight venue," Hennie said.

The timeline will be highlighted with photographs and short films as well as text. "Every record has been cross-referenced and substantiated to ensure an accurate and irrefutable reference is provided for anyone who uses it," Smith said.

Glenn senior scientists recently received an overview of the project. They have been invited to submit their input and comments to add to the breadth of ma-

terial already available. Next, Hennie and Smith will roll out the timeline to Center managers prior to its unveiling.

"As a living document, the database will offer Glenn employees the opportunity to critique and update the timeline forever," Hennie added. "We are ensuring that history never forgets that Glenn has, is, and will continue to play a substantial role in the power to fly."

If you have questions or suggestions, contact the Center archivist at (216) 433-5765 or Bonita.S.Smith@grc.nasa.gov. ♦

HISTORY OFFICE

[Add Event](#) [Update Events](#) [Approve Events](#) [Void Event](#)

Current Function: ViewEvent

Event Information: (View Only) [Request Data Change](#)

Event ID: 404 (This record has been approved and is not editable.)

Record Status: Active

Event Date: 01/31/1943

Type of Event: First

Event Title: First aircraft mechanic at NASA Cleveland was Frank Holt.

Description of Event: Frank Holt, employed by NACA Cleveland in 1942 was transferred in late January 1943 to work with John Gore, the head of engine test projects. Frank became the first (and for a short while only) aircraft mechanic at age 17.

Approved? Yes

Available for Web? Yes

Office Notes: Frank Holt narrative. See NACA AERL image 1310 (NOT ONLINE) for illustration



Graphic by Terry Condrich

Enhancing microsystems

There is a storm brewing inside the Photoluminescence Spectroscopy Laboratory of that is designed to spur the growth of microsystems, an emerging worldwide technological revolution predicted to be as big or even bigger than the microelectronics revolution.

Scanning Tunneling Optical Resonance Microscopy (STORM) is a new technology designed and developed by Glenn, Rochester Institute of Technology, and OAI engineers in the Photovoltaic and Space Environmental Effects Branch to probe the optoelectronic properties of nanoscale materials and devices that govern the electrical, optical, and mechanical behavior of a microsystem.

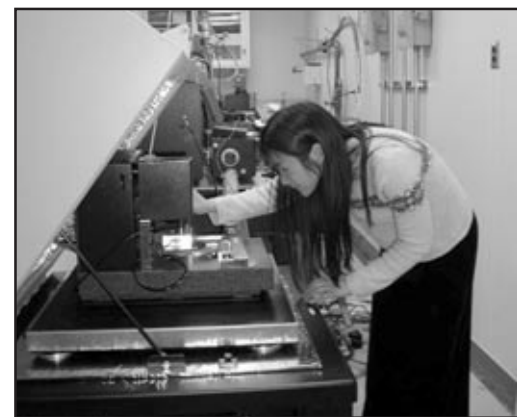
"A complete microsystem may contain a sensor, transducer, actuator, or MEMS device, the associated microelectronics or small computer chips, a power system, and necessary packaging," explained Dr. Sheila Bailey, Photovoltaic and Space Environmental Effects Branch. "We have developed a system that combines traditional scanning tunneling microscopy (STM) with optical spectroscopy provided by local fiber optic illumination to characterize the optoelectronic properties for each of its nanoscale elements."

Semiconducting optical properties can be investigated by spectroscopically illuminat-

ing the STM tip with modulated optical to near-IR wavelengths using a tunable ring laser and measuring the change in the tunneling current using a lock-in amplifier. STORM has the ability to determine the optical band gap of these semiconductor materials, which will be key to fabricating an atomically tuned device.

Microsystems will add functionality; reduce the size, weight, and cost; and provide a host of enabling technologies for the scientific and commercial products of the future.

Dr. Eva Lau (5410) makes sample adjustments to STORM, which is housed in the Photoluminescence Spectroscopy Laboratory.



Bondurant helps dreams come true

BY DOREEN B. ZUDELL

When you reach out to help someone, you never know the full impact you will have on that person," said Dr. R. Lynn Bondurant.

Bondurant, who retired from Glenn as Educational Programs Officer in 1999 with 19 years of NASA service, doesn't have to wonder about the impact he had on Mike Kersjes, a teacher in Grand Rapids, MI. In a recently released book entitled *A Smile as Big as the Moon: A Teacher, His Class and Their Unforgettable Journey*, Kersjes praises Bondurant for his help in sending the first group of special education students to Space Camp in Huntsville, AL.

Kersjes, besides being a football coach, taught special education at a Michigan high school during the 1980's. Seeing an advertisement for Space Camp, he got an idea that his students could benefit from going to the camp. However, most people weren't receptive to sending children with special needs (such as Tourette syndrome, Down syndrome, dyslexia, eating disorders, and a variety of emotional problems) to a camp designed for "bright" students. Fortunately, through faith and fortitude, Kersjes and his associate, Robin McKinney, hooked up with some people who agreed that, if given a chance, their

students could do as well as any others. One of those people was Glenn's own Bondurant.

The book chronicles Kersjes' struggle to gain permission and prepare his class to attend Space Camp. An excerpt from the book explains the pivotal role Bondurant played in the journey: "Among the many people who supported our venture, none was more vital or enthusiastic than Dr. R. Lynn Bondurant, who worked out of Lewis Research Center in Cleveland and was in charge of NASA education for the Midwest. We had been referred to him by Dr. Brown, who had assured us that Dr. Bondurant would not only provide us with the curriculum material we needed but that we would also find him to be an enormously likeable and generous man. Right on both counts."

A longtime advocate of people with disabilities, Bondurant enthusiastically embraced Kersjes' dream, and, in addition to curriculum material, began to provide guidance in the form of contacts and grant writing.

Bondurant explained that helping Kersjes was not only a personal pleasure but also part of NASA's educational philosophy to nurture and prepare young people for careers in science, technology, engineering, and mathematics. "I was fortunate to be at Lewis (Glenn) at a time when efforts to mainstream people with disabilities into society was just beginning," Bondurant said. "Also, about the time I started working with Mike, I had the first NASA film captioned for the hearing impaired by WGBH in Boston and several publications translated into Braille through the efforts of Joe Nervi, who worked with me at the time."



Dr. Bondurant

Kersjes said he values Bondurant's support then and today. "Lynn is truly my mentor—both professionally and personally. He is there to cheer me on and encourage me to persevere."

Kersjes' endeavors have moved on from teaching to developing his nonprofit organization, Space Is Special (SIS), in which Bondurant serves on the board. SIS is committed to motivating special needs and high-risk children to an interest in mathematics, science, and technology by providing "hands-on/minds-on" learning experiences. SIS has also created a unique partnership with Space Camp in Huntsville to offer programs and opportunities to special needs children.

At present Kersjes is employed by the University of California, Irvine at Marshall Space Flight Center in Huntsville, AL, to work with students, including those from Ohio, to prepare protein growth experiments to fly onboard the International Space Station.

There is more on the horizon for Kersjes and his dream—in which Bondurant will be a part. Disney is making a movie from the story that inspired his book. Moviegoers everywhere will see the story of one of Glenn's contributions that has impacted students with disabilities, and maybe even a cameo by Bondurant.

In the meantime, there is no grass growing under retiree Bondurant's feet. He continues to be involved in many educational initiatives, including the development of a human space flight course for Michigan's Virtual High School.

Said Bondurant, with a gleam in his eye, "I'm still trying to decide what I want to do when I grow up." ♦



A Cleveland, OH, student at Space Camp in Huntsville, AL.

Best new products recognized

Glenn news release

Technologies developed at Glenn will result in safer and less costly airplane engines as well as more environmentally friendly materials for use in those engines. These technology advances, the Numerical Propulsion System Simulation (NPSS) and Environment Conscious Ceramics (Ecoceramics), received awards, along with others in Northeast Ohio, at the 2002 NorTech Innovation Award ceremony on May 6.

NPSS is considered a world-class propulsion system simulation tool that provides the U.S. aerospace industry with unprecedented capability and ease of use. An emerging U.S. standard for aerospace simulations, it was designed and is maintained with the full interaction of every major aircraft engine manufacturer in the world. This software tool will reduce the cost and risk associated with advanced propulsion system development. The reduced risk translates into increased safety

for aeronautics and the human exploration of space.

Gregory Follen, Cynthia Naiman, Bret Naylor (ISI), Computing and Interdisciplinary Systems Office, and Thomas Lavelle, Propulsion Systems Analysis Office, worked with a team of 39 other engineers from Glenn and 14 other organizations in the development of this simulation tool.

Ecoceramics technology uses processes and materials that minimize harmful effects on the environment. The starting materials are renewable resources and environmental wastes, such as natural wood, sawdust, or cellulosic fibers. The shaped preforms from these cellulosic materials are pyrolyzed and infiltrated with various non-oxide and oxide-based materials to form ceramics with different composition and densities. The process, resulting in lighter, less costly ceramics that can operate at high temperatures, is important in the development of more



Naiman



Dr. Singh

efficient airplane engines. Dr. Mrityunjay Singh, QSS/Materials Division, developed the manufacturing process.

NorTech Innovation Awards, formerly known as the EDI Innovation Awards, are named for the Northeast Ohio Technology (NorTech) Coalition, the technology affiliate of Cleveland Tomorrow. The awards honor innovators and companies for creating some of the best new products in Northeast Ohio.

The awards program is sponsored by Key Bank, Ernst & Young, Squire Sanders & Dempsey LLP, the Ohio Department of Development, and Case Western Reserve University's Weatherhead School of Management and its subsidiary Enterprise Development, Inc. ♦

Consortium will focus on safe human habitation in space

Continued from page 1

organizations' unique skills, capabilities, and facilities to achieve common research goals involving human health in space as well as on Earth.

The research will leverage NASA's state-of-the-art knowledge and expertise in the areas of fluid physics and sensor technology together with the other consortium members' world-class capabilities in biomedical research and health care to

mitigate risks to astronaut health in long-term space flight.

Conducting research to enable safe and productive human habitation of space is a major goal of NASA's Office of Biological and Physical Research (OBPR), which sponsors this research. Mary Kicza, associate administrator heading OBPR, elaborates, "Long-term space flight exposes human beings to physiological and psychological health risks from radiation, reduced gravity,

and isolation and requires the ability to provide crew medical care remotely."

One of the highlights of the signing was Astronaut Dr. Shannon Lucid, now

chief scientist for NASA, who spoke to attendees.

Center Director Donald Campbell explained, "The John Glenn Biomedical Engineering Research Consortium reflects not only Glenn's commitment to improving long-term human space flight, but also its impact on the Greater Cleveland community by introducing new technologies applicable to medical products for use by physicians and their patients."

More information on the John Glenn Biomedical Engineering Consortium can be found at <http://microgravity.grc.nasa.gov/grcbio/bec.html>. ♦

Representatives of member institutions signing the consortium agreement are, left to right, Donald Campbell, NASA Glenn; Dr. Huntington Willard, University Hospitals of Cleveland; Dr. Richard Rudick, Cleveland Clinic Foundation; Dr. Patrick Crago, Case Western Reserve University; and Dr. Simon Ostrach, National Center for Microgravity Research.



FEB awards recognize service

Karen McLaughlin, Accounting and Reports Branch, and **Laurel Stauber**, Commercial Technology Office, were among the 16 Glenn civil servants honored with the Federal Executive Board Wings of Excellence Award on April 30 (but inadvertently omitted from the *AeroSpace Frontiers*, June 2002).

McLaughlin was recognized for her technical knowledge as team lead for the general ledger and property accounting at Glenn where she consistently exceeded performance requirements to complete implementation of the NASA-wide Core Financial Project. Her rapport with staff and dedication to accurate reporting

notably improved public confidence in Agency stewardship.

Stauber was recognized for her exceptional professional and interpersonal skills as a marketing specialist who effectively marketed Glenn technologies and motivated personnel to participate in the technology transfer process through publications, awards, and partnership opportunities, which have brought notoriety to Glenn and initiated product commercialization. Her enthusiasm also extends to membership in the Speakers Bureau and participation as a science fair judge. ♦



McLaughlin



Stauber

In Appreciation

On behalf of my brothers (two of the five, Jack and Don, have worked at GRC) and my sisters, I would like to thank all our friends at GRC for your generosity and expression of sympathy at the time of our mother's death. Thank you for the beautiful flowers, prayers, and cards. I wish to give a special thanks to all those GRC friends who participated in the leave donation program. I was overwhelmed with the support you gave me. Your donation of time allowed me to honor my mother's wish to die peacefully at home.

—**Mary Zeller, John Zeller, retired**
Don Zeller, CSU contractor

I truly appreciate the many expressions of concern from my caring GRC friends due to my layoff earlier this year. I will treasure the generous gifts recently received from the members of the Speakers Bureau. Most importantly, I am grateful for the friendships that developed over many years. Thank you for the opportunity to have been associated with such a responsive NASA Speakers Bureau. It has been my privilege working with you.

—**Patricia Hannan**

People



Lester

Mary Lester has been named Deputy Chief, Logistics and Technical Information Division. Lester has served in a number of high-profile organizations during her 22-year career at Glenn, including Space Station, Launch Vehicles, and, most recently, as the Executive Officer for the Space Directorate. She earned a bachelor's degree from Miami University and a master's from Baldwin Wallace College. Throughout her career, she has demonstrated outstanding leadership and interpersonal skills.

Three Glenn employees were recently named **Space Flight Awareness (SFA) Honorees**. The SFA is a NASA-managed motivational program that ensures that all employees involved in human space flight are aware of their role in promoting astronaut safety and mission success. The SFA Award is presented to employees for their dedication to quality work and flight safety. The three honorees traveled to Kennedy Space Center, where they attended a reception held in their honor. They include **Helen Brown**, ZIN/Microgravity Science Division, who served as an integration engineer for the Space Acceleration Measurement System (SAMS) project for 10 years and was responsible for delivering SAMS systems to Kennedy for deployment on the space shuttle and International Space Station. She coordinated space shuttle and space station crew training, development of crew procedures, creation of agreement documentation, verification of systems, and certification of flight systems. **Steve O'Donnell**, Test Installations Division, was recognized for his contributions to the Extensional Rheology Experiment, which was critical in achieving the experiment launch schedule. O'Donnell's work included design, fabrication, and extensive travel to the launch site in New Mexico. Because of his knowledge and dedication, O'Donnell was chosen to lead the technical support for the Shear Extensional Rheology Experiment, scheduled to launch in February 2004. **Glenn Williams**, Instrumentation and Data Systems Branch, has been an integral part of the engineering team that developed and flew the Combustion Module (CM) on STS-83 and (CM-1) STS-94 and have completed preparations for CM-2 on the upcoming flight of STS-107. During CM-1, Williams was the lead for the image processing needed to process critical science. He was named avionics lead for CM-2, responsible for significant upgrades to the CM-1 hardware.



O'Donnell



Williams

DEADLINES: News items and brief announcements for publication in the August issue must be received by noon, Friday, July 12. The deadline for the September issue is noon, Friday, August 9. Submit contributions to the editor via E-mail doreen.zudell@grc.nasa.gov, fax 216-433-8143, phone 216-433-5317 or 216-433-2888, or

Ideas for news stories are welcome but will be published as space allows.

Editor.....Doreen B. Zudell
InDyne, Inc.
Assistant Editor.....S. Jenise Veris
InDyne, Inc.
Managing Editor.....Lori J. Rachul

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Behind the Badge...

a closer look at our colleagues

Syretta Stewart



Job Assignment: I'm a grants/contract specialist in the Space Systems and Grants Branch, Office of Acquisition.

Time at Glenn: I've worked here for 14 years.

Hometown: I was born, raised, and still live in

Describe your family: I have a very large family. My husband, Emmitt, is a retiree of the Chrysler Plant in Twinsburg.

Favorite food: I like Southern and Oriental cuisine.

Favorite music: I enjoy Jazz, R&B, and Hip-Hop.

Favorite web site: www.golfchannel.com and www.usatoday.com

Favorite movie or play: My favorite play is *A Gathering of Old Men*. My favorite movies are *Little Big Man* and *Unforgiven*.

Activities when away from Glenn: I enjoy golfing, spending time with my grandchildren, and playing video games—in that order.

What do you see as an area of expertise to be proud of at Glenn: When I left my previous position of 20 years to come to Glenn (then Lewis), I was very apprehensive. People thought I was crazy. However, because of the educational and promotional opportunities here at Glenn, and the many special friends and acquaintances I have come to know, I have never regretted the move. In the area of administration and technology, Glenn always seems to be on the cutting edge.

Richard Manco



Job Assignment: I'm a BTAS, Inc., employee supporting the Community and Media Relations Office as Exhibits manager for the Visitor Center.

Time at Glenn: This is my 7th year at Glenn. Previously, I worked for the Yuma Proving Grounds in Yuma, AZ, for 14 years.

Hometown: I was born in Cleveland and currently reside in

Describe your family: I married a very special woman, Kimberly Mordaunt (who works in Glenn's Organization Development and Training Office) on April 19, 2002. We live in Brunswick with my 11-year-old son, Ricky. The three of us own a Sheltie named Lady and Sun Conjure (parrot family) named Fruitloops. We also have a garden pond with 14 assorted fish and 2 bullfrogs. My daughter, Janene, her husband Chris, and my 1-year old grandson, Austin, live in Yuma.

Career alternative: Chef

Favorite food: I enjoy all seafood.

Favorite music: 50's, 60's, 70's, and 80's (all types).

Favorite web site: www.ZDNET.com

Favorite movie: *It's a Wonderful Life* is one of my all-time favorites. I also really enjoy thrillers, mysteries, and action movies.

Person you most admire: My late grandfather.

Activities when away from Glenn: I love working on my home and my yard. I coach my son's baseball and football teams. I am currently enrolled as a full-time student working on a master's degree in information technology.

In Memory

Eugene Tomasch, 83, who retired from Glenn in 1984 with 38 years of Federal service, followed by several years for onsite contractors, recently died. Tomasch dedicated his career to the Center's Photo Laboratory, now known as the Imaging Technology Center. He worked as the lead process camera

operator and played a key role at Glenn when the Photo Lab tested the first



Tomasch

ACTI Process Camera (which included a unique microprocessor) in the country. Tomasch was respected and loved by many people in and outside of the Photo Lab.

Exchange Corner

Sidewalk sale: Thursday and Friday, July 18 and 19, 11 a.m. to 2 p.m., a sidewalk sale will be held on the patio of [redacted]. There will be great buys on Exchange Store closeout items. A hot dog and Pepsi lunch special will be served on the patio both days during the sale.

NSIP: Learning by doing

BY S. JENISE VERIS

The annual infusion of new ideas submitted to the NASA Student Involvement Program (NSIP) from schools in Glenn's region continues to be a source of pride to the Office of Educational Programs (OEP). Seventeen schools across five of the six states in the region participated in the national program that engages the imagination of students K-12 in experiments and design challenges linked directly to NASA's exciting missions of exploration and discovery.

"Working with NSIP this year was particularly inspiring because it's the first year kindergartners received recognition," said Sue Gott, OEP, Glenn's NSIP chairperson. "It's important to plant seeds of opportunity with our youth today, if they are going to grow into our scientists and engineers of tomorrow."

The six categories of competition included Aerospace Technology Engineering Challenge, My Planet Earth: Study Our Amazing and Beautiful Planet, My Planet Earth, Design a Mission to Mars: Explore the Red Planet, Watching Earth Change, Science & Technology Journalism: Share

NASA's Story of Discovery and Invention, and Space Flight Opportunities.

The Glenbrook North High School, Northbrook, IL, team of Joel Fenner, Alex Braden, Stanley Von Medvey, and Nick Guggemos was one of seven winners in the Space Flight Ops Sub-Orbital category selected to receive an all-expense-paid trip to Student Flight Week at NASA Wallops Flight Facility, Wallops Island, VA, in June. They were accompanied by their teacher, Lynne Zielinski, to meet and work with NASA scientists and engineers prior to the launch of their experiment, Environment 2.0, on a NASA Sounding Rocket.

Glenbrook accounted for five of the eight finalists in the Space Flight Ops category from the Glenn region, in addition to Parma Senior High School, Parma, OH; Pepin Area School, Pepin, WI; and a parent-led team from Minneapolis, MN.

A national winner is selected from seven NASA centers' first-place middle school



Photo by Sue Gott

Mission to Mars winners: left to right, Phil Koch, Matt Mitcheltree, and Ryan Fitzgerald of Kensington Intermediate School, Rocky River, OH.

winning teams for each competition category. These national winners will attend Space Camp this summer. All second and third place winners received medals.

NSIP is designed by scientists and educators to support the National Standards for science, mathematics, technology, and geography. The goals defined for each category align with National Education Standards to enhance learning opportunities and aid the development of skills—science inquiry, computer and Internet skills, teamwork, communications, etc.—that will benefit student participants throughout their lifetime. ♦

National Aeronautics and
Space Administration

**John H. Glenn Research Center
Lewis Field**
21000 Brookpark Road
Cleveland, Ohio 44135

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